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Observations About the US Voting Equipment Conformity Assessment System

Prepared for
The Election Assistance Commission
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Washington, DC

Purpose of Presentation

This presentation makes some general observations about the voting equipment conformity assessment system and provides some conclusions on how further improvements might best be made in that system.

Characteristics of the US voting equipment conformity assessment system:

- *It is resource limited.*
- *It is distributed (federal, state and local responsibilities).*
- *It is more periodic than routine.*
- *Local jurisdictions are diverse.*
- *It must balance real and hypothetical problems.*
- *Problems must be prevented not remedied*

The US voting equipment conformity assessment system is

resource limited.

Conclusion

Every use of resources draws them from another place where they are needed.

It is better to make conscious decisions about resource priorities.

Illustration of an Application

The VVSG requires that vendors have a quality and change management process. States are expected to confirm that the vendors system is adequate.

Some call for ISO 9001 compliance. However, ISO only certifies that a vendor is following their written procedures. The question is, what vendor procedures are adequate?

Once best practice procedures are identified is the additional cost of requiring ISO certification worth the cost?

Do state officials know what the EAC process is doing and what they are expected to do?

The US voting equipment conformity assessment system is

It is distributed.

Further, testing and certification cannot create quality, they only reveal it.

Conclusion

More testing will not increase quality.

A culture of quality with a shared understanding of the specific requirements will increase quality.

Illustration of an Application

There is wide agreement that escrowing software at the NIST NSRL is a very good improvement.

However, few states know how to check HASH codes.

An independently developed and verified tool for checking HASH codes only exists for one vendor.

No means for checking HASH codes after they are loaded on voting terminals exists.

In this distributed system it is critical that all elements have the means to confirm they are looking at the same equipment.

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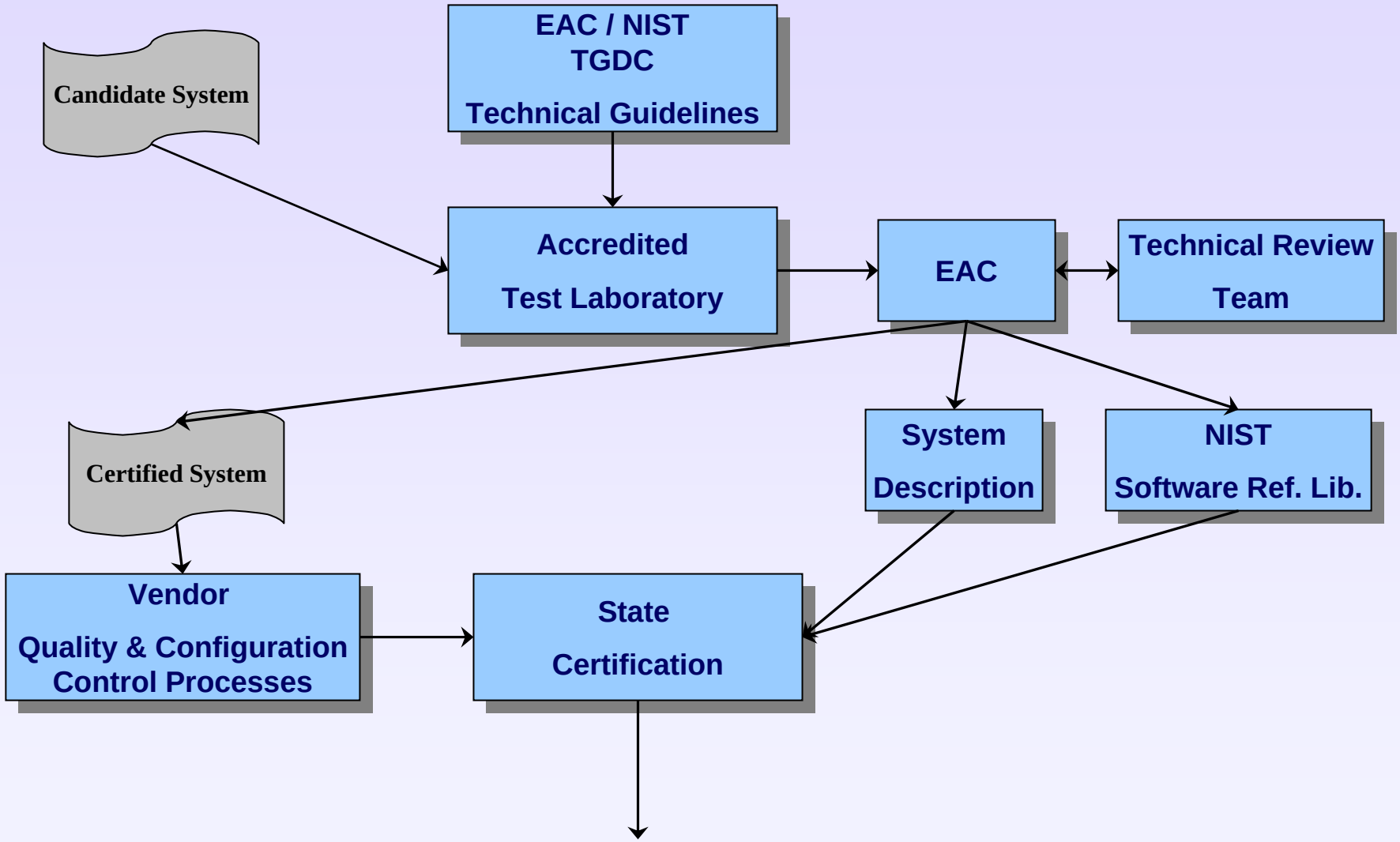

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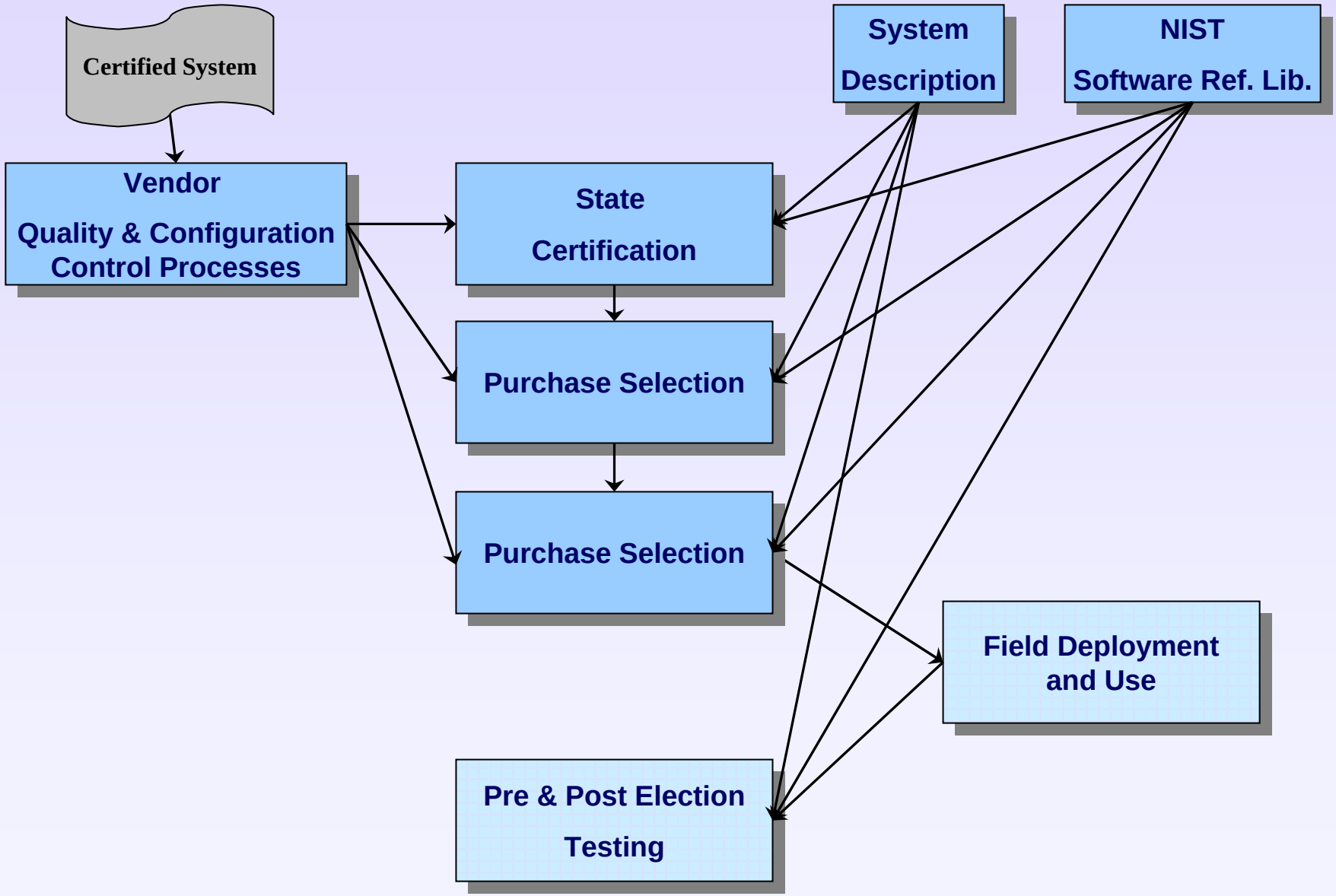


Typical FCC Submission

External Photos

Typical FCC Submission

Internal Photos

The US voting equipment conformity assessment system is

resource limited and more periodic than routine.

Conclusion

Mistakes are likely.

Evaluation should be redundant on critical elements and sparse on less important elements.

Illustration of an Application

Is it acceptable to allow Supplier Declaration of Conformity on some requirements, such as temperature and humidity ranges, in order to free testing resources for in-depth and redundant evaluation of higher priority elements, such as accuracy and security?

The US voting equipment conformity assessment system is

more periodic than routine and problems must be prevented not remedied.

Conclusion

Having vendors focus during development on the right issues is more effective than revealing deficiencies during certification.

Illustration of an Application

Should there be, on a voluntary basis, a preliminary test plan developed with vendors before they start development to identify the focus areas for the system certification?

The purpose would be to communicate clearly the areas of critical concern so that the vendor has the opportunity to pay particular attention to those issues during development.

This implies that election officials are willing to clarify their expectations 2-3 years before a system is delivered.

The US voting equipment conformity assessment system is

Local jurisdictions are diverse and it must balance real and hypothetical problems.

Conclusion

For many issues solutions must be in election management practices or in equipment specifications.

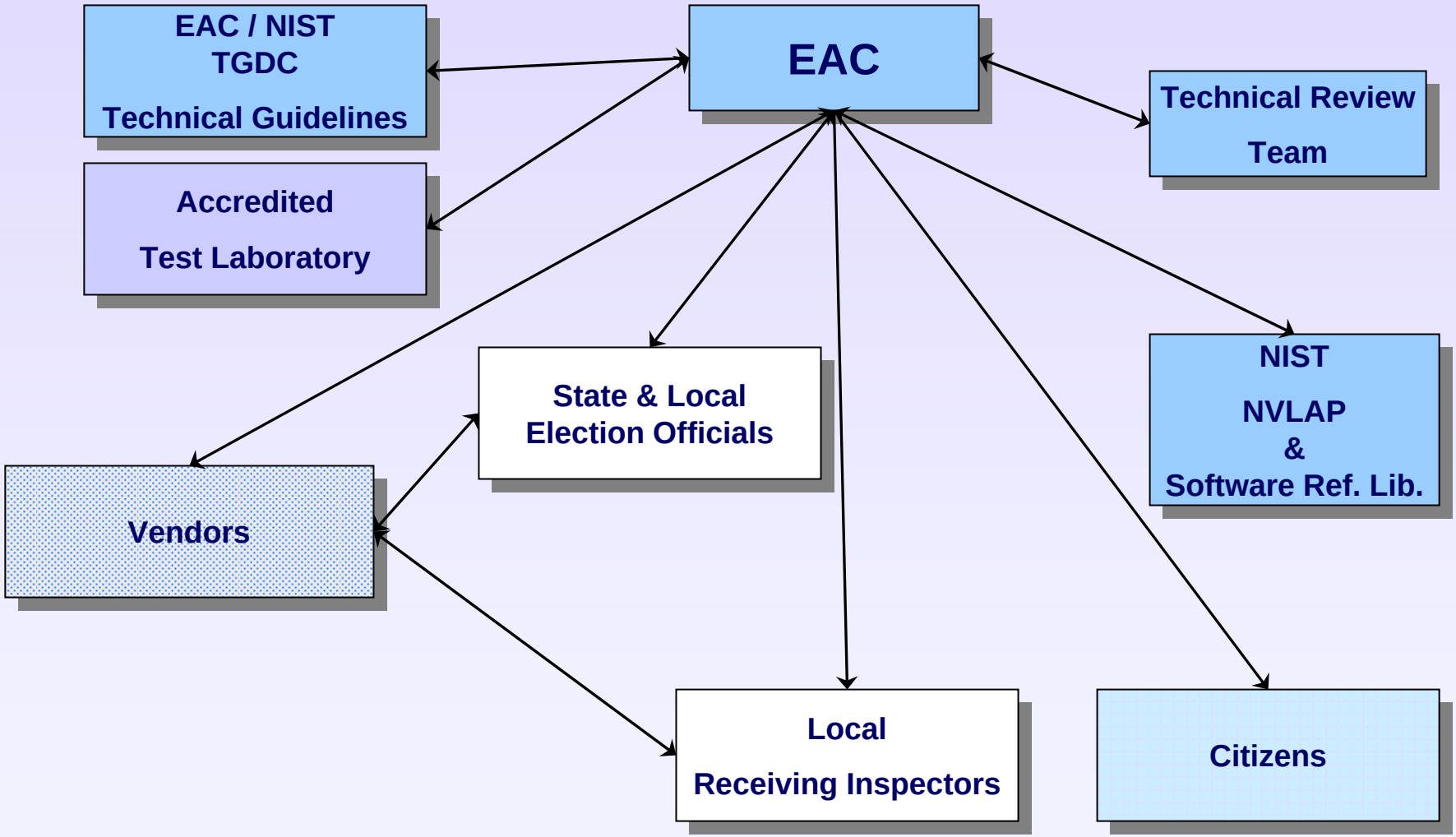
Either will work but it must be in one or the other.

Illustration of an Application

Periodic prompting to change passwords. This may be automated in equipment or done by election management practice.

Should the EAC make the decision on where it will be done? If not, how will jurisdictions be alerted that by buying one vendor's equipment they will be well advised to implement certain complementary management practices?

Should each ITA test report have a transmittal section to local officials highlighting such items?



The US voting equipment conformity assessment system is

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Conclusion

The ITA process should be molded to add maximum value to the efforts of state and local officials.

The ITA process should encourage remedies.

Illustration of an Application

Should ITA reports have specific provisions passing on information for use by state officials in their state certification efforts?

Illustration of an Application

The certification process needs an expedited way to handle emergency changes, changes to address anomalies identified during certification and state or local requested features.

While the change qualification process should be expeditions it must provide adequate safeguards to guarantee the integrity of the certification.

Conclusion

A well constructed certification system provides satisfactory answers to central issues:

- ***What is a minimal acceptable system?***
- ***Are the testing lab/testers/lab assessors qualified?***
- ***Will the vendor deliver units within manufacturing tolerances to those tested?***
- ***Will the election officials know if non-compliant units are delivered and what actions can they take?***
- ***Will election officials and poll workers use the systems as intended?***